

WHAT IS CLAIMED IS:

1. A broadcasting system comprising:

a broadcasting station for broadcasting a digital content together with attribute information indicating an attribute thereof; and

a plurality of reception apparatuses having reception means for receiving said digital content and attribute information broadcast from a broadcasting station, a recording medium for recording received digital contents and attribute information, output means for outputting received digital contents, and selection means for selecting digital contents by comparing selection information indicating users's taste with attribute information assigned to digital contents, wherein

said attribute information is expressed with an n -dimensional vector A comprising attribute items as elements each indicative of attribute intensities for a digital content;

said selection information is expressed with an n -dimensional vector S comprising user's taste items as elements each indicative of taste intensities; item types and orders for said attribute information and said selection information correspond to those for an attribute information's vector A and a selection information's vector S ; and

said reception apparatus's selection means performs an inner product operation between an attribute information's vector A attached to a broadcast digital content and

a selection information's vector S and determines whether to select that digital content based on an inner product operation result.

2. A broadcasting system according to claim 1, wherein said reception apparatus's selection means finds a selection value P based on the following equation and selects a digital content based on the size of this selection value P:

$$A = (a_1, a_2, a_3, \dots, a_n)$$

$$S = (s_1, s_2, s_3, \dots, s_n)$$

$$P = \frac{A \cdot S}{|A| |S|}$$

where

$$A \cdot S = \sum_{k=1}^n a_k s_k$$

$$|A| = \sqrt{\sum_{k=1}^n a_k^2}$$

$$|S| = \sqrt{\sum_{k=1}^n s_k^2}$$

in which neither A nor S is 0 vector.

3. A broadcasting system according to claim 1, wherein said selection information's vector S is found from a vector A of attribute information attached to a plurality of digital contents selected by a user.

4. A broadcasting system according to claim 3, wherein said selection information's vector S is found according to the following equation:

$$S = \frac{1}{M} \sum_{k=1}^M A_k$$

where M is assumed to be the number of digital contents selected by a user; and an attribute vector for the K-th digital content selected by a user is assumed to be:

$$A_k = (a_{1k}, a_{2k}, a_{3k}, \dots, a_{nk})$$

5. A broadcasting system according to claim 3, wherein said selection information's vector S is found according to the following equation:

$$S = \frac{1}{M} \sum_{k=L-M+1}^L A_k$$

where M is assumed to be the number of windows for finding a vector S; L is assumed to be a start point for selecting a plurality of digital contents for finding the vector S; and

an attribute vector for the K-th digital content selected by a user is assumed to be: $A_k = (a_{1k}, a_{2k}, a_{3k}, \dots, a_{nk})$

6. A broadcasting system according to claim 3, wherein said selection information's vector S is found by averaging vectors A for attribute information attached to a plurality of digital contents reproduced by a user for a specified time or more.
7. A broadcasting system according to claim 3, wherein said selection information's vector S is found by averaging vectors A for attribute information attached to a plurality of digital contents reserved by a user.
8. A broadcasting system according to claim 3, wherein said selection information's vector S is found by averaging vectors A for attribute information attached to a plurality of digital contents reproduced by a user for a specified time or more, averaging vectors A for attribute information attached to a plurality of digital contents reserved by a user, assigning a weight to each average, and combining these weights.
9. A broadcasting system according to claim 1, wherein said reception apparatus's selection means selects a digital content based on a vector S of selection information corresponding to a plurality of users.
10. A reception apparatus comprising:
 - reception means for receiving said digital content and attribute information broadcast from a broadcasting station;
 - recording medium for recording received digital content and attribute information;
 - output means for outputting received digital content; and

selection means for selecting a digital content by comparing selection information indicating user's taste with attribute information attached to the digital content, wherein

said attribute information is expressed with an n-dimensional vector A comprising attribute items as elements each indicative of attribute intensities for a digital content;

said selection information is expressed with an n-dimensional vector S comprising user's taste items as elements each indicative of taste intensities;

item types and orders for said attribute information and said selection information correspond to those for an attribute information's vector A and a selection information's vector S; and

said selection means performs an inner product operation between an attribute information's vector A attached to a broadcast digital content and a selection information's vector S and determines whether to select that digital content based on an inner product operation result.

11. A reception apparatus according to claim 10, wherein said selection means finds a selection value P based on the following equation and selects a digital content based on the size of this selection value P:

$$A = (a_1, a_2, a_3, \dots, a_n)$$

$$S = (s_1, s_2, s_3, \dots, s_n)$$

$$P = \frac{A \cdot S}{|A| |S|}$$

where

$$A \cdot S = \sum_{k=1}^n a_k S_k$$

$$|A| = \sqrt{\sum_{k=1}^n a_k^2}$$

$$|S| = \sqrt{\sum_{k=1}^n S_k^2}$$

in which neither A nor S is 0 vector.

12. A reception apparatus according to claim 10, wherein said selection information's vector S is found from a vector A of attribute information attached to a plurality of digital contents selected by a user.

13. A reception apparatus according to claim 12, wherein said selection information's vector S is found according to the following equation:

$$S = \frac{1}{M} \sum_{k=1}^M A_k$$

where M is assumed to be the number of digital contents selected by a user; and an attribute vector for the K-th digital content selected by a user is assumed to be:

$$A_k = (a_{1k}, a_{2k}, a_{3k}, \dots, a_{nk})$$

14. A reception apparatus according to claim 12, wherein said selection information's vector S is found according to the following equation:

$$S = \frac{1}{M} \sum_{k=L-M+1}^L A_k$$

where M is assumed to be the number of windows for finding a vector S; L is assumed to be a start point for selecting a plurality of digital contents for finding the vector S; and

an attribute vector for the K-th digital content selected by a user is assumed to be: $A_k = (a_{1k}, a_{2k}, a_{3k}, \dots, a_{nk})$

15. A reception apparatus according to claim 12, wherein said selection information's vector S is found by averaging vectors A for attribute information attached to a plurality of digital contents reproduced by a user for a specified time or more.

16. A reception apparatus according to claim 12, wherein said selection information's vector S is found by averaging vectors A for attribute information attached to a plurality of digital contents reserved by a user.

17. A reception apparatus according to claim 12, wherein said selection information's vector S is found by averaging vectors A for attribute information attached to a plurality of digital contents reproduced by a user for a specified time or more,

averaging vectors A for attribute information attached to a plurality of digital contents reserved by a user, assigning a weight to each average, and combining these weights.

18. A reception apparatus according to claim 10, wherein said selection means selects a digital content based on a vector S of selection information corresponding to a plurality of users.